COLUMBIUM (NIOBIUM) STATISTICS

By David A. Buckingham and Larry D. Cunningham

[All values in metric tons (t) columbium content unless otherwise noted]

Last modification: August 18, 2004

Year	Reported mine production	Reported primary production	Reported producer shipments	Reported government shipments	Reported imports	Reported exports	Reported stocks	Reported consumption	Reported apparent consumption	Estimated unit value ($/t)	Estimated unit value (98$/t)	Reported world mine production
1964	0	372		310	1,260	80	1,010	727	1,650	2,680	14,100	2,480
1965	0	889		320	1,420	2	1,760	1,010	1,760	2,680	13,900	3,120
1966		1,660		305	2,630	3	2,770	1,270	1,930	3,500	17,600	5,060
1967		889	453	399	2,720	3	3,970	1,500	1,910	3,060	14,900	5,150
1968		1,080	984	671	1,420	3	3,170	1,420	2,890	2,900	13,600	4,950
1969		1,160	801	734	1,800	19	3,620	1,590	2,070	3,310	14,700	6,610
1970	0	649	598	409	1,950	21	3,570	1,290	2,400	3,530	14,800	8,460
1971	0	463	439	17	1,150	9	2,830	1,520	1,890	3,280	13,200	3,740
1972	0	669	494	353	1,650	7	2,640	1,770	2,190	4,070	15,900	5,950
1973	0	679	617	1,060	2,120	22	2,970	1,960	2,820	4,480	16,400	14,700
1974	0	870	766	1,240	2,300	8	3,360	2,200	3,150	5,170	17,100	9,340
1975	0	447	483	210	1,330	12	2,930	1,580	1,950	5,390	16,300	7,860
1976	0	710	424	32	2,140	15	2,370	1,670	2,720	8,480	24,300	9,470
1977	0	660	489	0	2,320	17	2,500	1,990	2,170	8,700	23,400	8,800
1978	0	710	838	1	2,980	22	2,480	2,580	2,990	9,560	23,900	9,670
1979	0	440	917	0	3,780	23	3,010	2,870	3,230	21,400	48,100	14,400
1980		920	649	0	4,410	78	3,890	2,950	3,450	20,500	40,600	15,100
1981		519	414	0	3,610	41	3,780	2,830	3,680	19,300	34,600	14,800
1982			430	-12	1,970	40	2,710	1,670	2,990	14,600	24,700	10,600
1983	0		678	0	1,480	35		1,960	2,610	14,600	23,900	8,580
1984	0		668	0	2,790	36		2,450	3,480	11,800	18,500	13,900
1985	0		705	-97	2,720	35		2,710	3,420	11,800	17,900	14,800
1986	0		554	0	2,160	33		2,270	3,200	8,670	12,900	14,600
1987	0		597	0	2,750	39		2,350	3,310	7,660	11,000	9,360
1988	0		642	0	2,730	45		2,670	3,580	7,660	10,600	16,900
1989			662	0	3,640	104		2,440	3,400	10,300	13,500	14,100
1990				0	3,030	227		2,590	3,360	10,300	12,800	15,300
1991				0	3,290	270		2,410	3,310	8,930	10,700	15,700
1992				0	3,680	350		2,460	3,500	8,930	10,400	15,300
1993	0			0	3,510	300		2,470	3,500	8,200	9,250	12,400
1994	0			0	4,240	320		2,750	3,700	8,200	9,020	15,700
1995	0			0	4,450	370		2,860	3,800	9,460	10,100	15,600
1996	0			30	4,210	190		3,380	3,830	9,460	9,830	16,200
1997	0			126	6,120	70		3,770	4,030	9,460	9,610	20,500
1998	0			145	6,520	50		3,640	4,150	9,460	9,460	26,200
1999	0			280	6,260	160		3,460	4,100	9,460	9,260	24,600

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2000	0			217	6,500	100		4,090	4,300	19,700	18,700	24,800
2001	0			-4	7,180	110		4,230	4,400			31,100
2002	0			9	5,650	100		3,150	4,100			32,800

Columbium (Niobium) Worksheet Notes

Data Sources
The sources of data for the columbium (niobium) worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB), Mineral Commodity Summaries (MCS), Mineral Facts and Problems (MFP), Mineral Commodity Profiles (MCP), and Metal Prices in the United States through 1998 (MP98). The years of publication and corresponding years of data coverage are listed in the References section below. Columbium data prior to 1964 were not included in the columbium (niobium) statistics worksheet because they were either recorded in gross weight, combined with tantalum data, ambiguous in detail, or were not available. Blank cells in the worksheet indicate that data either were not available or were withheld because they are proprietary.

Reported Mine Production
Mine production data represent the columbium content in columbium-bearing ores and mineral concentrates that were mined within the United States. A small, unreported quantity of columbium contained in columbium-bearing concentrates was produced in the years 1980–82 and 1989–92. Data are reported in the MYB.

Reported Primary Production
Primary production data represent the columbium content in ferrocolumbium that was produced in the United States. Data for the years 1964–81 are from the MYB. For the years 1982–2002, data were not available.

Reported Producer Shipments
Producer shipments data represent the columbium content of columbium metal, compounds, alloys, and other columbium materials that were shipped by domestic producers. For the years 1964–66 and 1990–2002, data were not available. Shipments data are from the MYB and the MFP.

Reported Government Shipments
Government shipments data are shipments or releases of columbium-bearing materials from the National Defense Stockpile (NDS). Negative numbers for the years 1982, 1985, and 2001 indicate an increase in the NDS inventory. Shipments data are from the MYB and the MFP.

Reported Imports
Imports data represent the columbium content of columbium mineral concentrates, metal, alloys, ferrocolumbium, tin slags, synthetic concentrates, and other columbium materials that were imported into the United States for consumption purposes. Data for the years 1983–2002 do not include the quantity of contained columbium in imported tin slags, synthetic concentrates, and other columbium materials imports. Data for the years 1996–2002 include the quantity of columbium contained in columbium oxide imports. Data for the years 1964–68 are from the MFP, and data for the years 1969–2002 are from the MYB.

Reported Exports
Exports data represent the columbium content of various columbium materials that were exported from the United States. Data for the years 1964–71 are from the MFP, and data for the years 1972–2002 are from the MCS.

Reported Stocks
Stocks data represent the columbium content of various columbium materials that were held in domestic producer or processor inventories. Data for the years 1964–72 are from the MFP and the MCP, and data for the years 1973–82 are from the MFP and the MCS. Beginning in 1983, data were not available.

Reported Consumption
Reported consumption data for the years 1964–76 represent the columbium content of columbium metal, ferrocolumbium, nickel columbium, and various columbium materials including small quantities of tantalum contained in some columbium materials, that were consumed/used in the United States. Data for the years 1977–2002 represent the columbium content of ferrocolumbium and nickel columbium that were consumed/used in the United States. Data are from the MYB.

Reported Apparent Consumption
Apparent consumption data represent the columbium content of various columbium-bearing materials that were consumed/used in the United States. Data for the years 1964–75 are from the MFP and the MCP, and data for the years 1976–2002 are from the MCS.

Estimated Unit Value ($/t)
Unit value for the years 1964–2000 is defined as the value of 1 metric ton (t) of columbium apparent consumption. The unit value is estimated using a yearend average value “price” of columbium pentoxide contained in columbium concentrates. This value is converted to the unit value ($/t) of columbium contained in the columbium pentoxide. Price data for the years 1964–2000 are from the MP98 and the MYB. Price data for the years 2001–02 are not available.

Estimated Unit Value (98$/t)
The Consumer Price Index conversion factor, with 1998 as the base year, is used to adjust unit value in current U.S. dollars to the unit value in constant 1998 U.S. dollars. Data for the years 2001–02 are not available.

Reported World Mine Production
Mine production data represent the columbium content of columbium-bearing ores and mineral concentrates that were produced from mines throughout the world. Data for the years 1964–68 are from the MFP and the MCP, and for the years 1969–2002 are from the MYB.

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